

## **Daniel O. Barnhurst**

### Statement of Professional Qualifications

Hydrogeologist with the Division of Site and Environmental Assessment, Office of New Reactors, US Nuclear Regulatory Commission, Rockville, MD.

#### **Education:**

M.S. Degree, Geology, Brigham Young University, 2003.

B.S. Degree, Environmental Geology, Brigham Young University, 2000.

#### **Qualifications:**

Mr. Barnhurst is a licensed Professional Geologist (TN #5533) and has over 14 years of experience in hydrogeological applications including hydrogeochemistry, aquifer characterization, groundwater flow and contaminant fate and transport modeling and design and optimization on monitoring well networks. He has worked at US DOE defense nuclear facilities and private nuclear waste disposal facilities where he characterized the long-term impacts on groundwater quality through installation and sampling of monitoring wells and development of predictive numerical models. At the US NRC he has performed hydrogeological analyses on the impacts of the construction and operation of nuclear power plants on groundwater quality and availability at sites throughout the US, including Florida.

#### **Employment History and Selected Projects:**

**May 2008 to Present-** Nuclear Regulatory Commission, Rockville, MD.

Mr. Barnhurst has worked as part of a team which evaluates safety and environmental hydrological impacts of new nuclear reactors. For the last 5 years he has worked almost exclusively performing hydrological evaluations for 7 NEPA Environmental Impact Statements. These evaluations have included review of geologic and characterization data (such as aquifer thickness, extent and flow parameters), analysis of numerical models of groundwater flow and contaminant fate and transport, hydrogeological conceptual model development and determination of water-use and quality impacts. In this capacity he has participated in technical interactions with applicants, local, state and Federal water agencies and testified as a subject matter expert before safety, licensing and contested hearings.

**October 2003 to May 2008-** Washington Savannah River Co., Aiken, SC

Mr. Barnhurst planned and performed characterization of geology, hydrology and contamination at RCRA/CERCLA waste units at or near defense nuclear sites. He was responsible for geologic analysis and mapping using core and geophysical log data. He designed and constructed groundwater flow and contaminant fate and transport modeling to support remedy selection and monitoring well network optimization at waste sites. He planned and performed groundwater and surface water sampling and developed water budgets, potentiometric surface maps and conceptual models to detail groundwater/surface water interaction. In this role he provided oversight of field activities including soil, groundwater and surface water sampling, well drilling, installation development and abandonment and geophysical data collection.

**Summer to Fall 2002-** Energy Solutions, Salt Lake City, UT

Mr. Barnhurst was responsible for evaluation of groundwater monitoring data from well networks surrounding waste disposal facilities. He also used numerical models to evaluate groundwater flow around the waste facilities and optimize the associated well networks. He helped to prepare reports for the Utah Division of Environmental Quality (DEQ), Radiation Control Board and the US Nuclear Regulatory Commission (NRC).

**Selected Reports**

2016, October, Final Environmental Impact Statement for Combined Licenses for Turkey Point Nuclear Plants Units 6 and 7, U.S. Nuclear Regulatory Commission and U.S. Army Corps of Engineers , NUREG-2176.

2015, November, Final Environmental Impact Statement for an Early Site Permit (ESP) at the PSEG Site, U.S. Nuclear Regulatory Commission and U.S. Army Corps of Engineers, NUREG-2168.

2013, January, Final Environmental Impact Statement for Combined License (COL) for Enrico Fermi Unit 3, U.S. Nuclear Regulatory Commission and U.S. Army Corps of Engineers, NUREG-2105.

2012, April, Final Environmental Impact Statement for Combined Licenses for Levy Nuclear Plant Units 1 and 2, U.S. Nuclear Regulatory Commission and U.S. Army Corps of Engineers, NUREG-1941.

2011, May, Final Environmental Impact Statement for Combined Operating Licenses (COLs) for Comanche Peak Nuclear Power Plant Units 3 and 4, U.S. Nuclear Regulatory Commission and U.S. Army Corps of Engineers, NUREG-1943.

2011, April, Final Environmental Impact Statement for Combined Licenses for Virgil C. Summer Nuclear Station Units 2 and 3, U.S. Nuclear Regulatory Commission and U.S. Army Corps of Engineers, NUREG-1939.

2010, Giacinto, J.F., McBride, M., Barnhurst, D.O., and ND Tiruneh, Hydrology 4 Pre- and Post-Construction Conceptual Model Development for Large Power Plant Construction Projects, Joint Federal Interagency Conferences on Sedimentation and Hydrology, 2<sup>nd</sup> JFIC 2010, Las Vegas, NV.

2009, Tiruneh, N.D., Nicholson, T.J., Raione, R., Ahn, H., Giacinto, J., Barnhurst, D., and M. McBride, Significance of Site-Specific Hydrogeologic Parameters in the Analysis of Radionuclide Transport at New Nuclear Reactor Sites, Eos Trans. AGU, 90(52), Fall Meeting Suppl., Abstract H43F-1081.

2009, Nicholson, T.J., Raione, R., Ahn, H., Barnhurst, D., Giacinto, J., McBride, M., and N.D. Tiruneh, Optimizing Characterization of Site Hydrology in Support of New Reactor Licensing at the U.S. Nuclear Regulatory Commission (Invited), Eos Trans. AGU, 90(52), Fall Meeting Suppl., Abstract H53N-01.

2007, Barnhurst, D.O and Steive, A.L., "Revised Groundwater Flow and Contaminant Transport Modeling to Support Phase II of the Corrective Action Plan for the Southern Sector of A/M Area, Revision 0, WSRC-RP-2007-4060.

2007, Williams, J.B, Mills, G., Barnhurst, D.O., Southern, S., Garvin, N., "Transport and Degredation of a Trichloroethylene Plume Within A Stream Hyporheic Zone", Third National Conference on Environmental Science and Technology, North Carolina A and T State University, September 12-14, 2007.

2005, Barnhurst, D.O., and Noffsinger, D.C., "Flow and Transport Modeling to Support the Phase II CAP for the Southern Sector of A/M Area", WSRC-RP-2005-4056.

2005, Noffsinger, D.C., Brewer, K.E., and Barnhurst D.O., "Flow and Transport Modeling to Support the Corrective Measures Study/Feasibility Study for the A-Area Burning Rubble Pit and Rubble Pit; Miscellaneous Chemical Basin and Metals Burning Pit Operable Unit (U), Revision 1, WSRC-RP-2004-4043.

2004, Brewer, K.E., and Barnhurst, D.O., "Flow and Transport Modeling for the Reanalysis of the D-Area Oil Seepage Basin (631-G) (U), Revision 0, WSRC-RP-2004-4076.

2003, Thesis; Barnhurst, D.O., "A Chemical, Stable, and Radioisotopic Investigation of an Alluvial-Fill Groundwater System in a Semi-Arid Environment, Southern Utah Valley, Utah", Brigham Young University Press, 2003, pg. 211.

2001, Mabey, M.A., Mayo, A.L., Nelson, S.T., Barnhurst, D.O. and Wood, M.J., "The Application of Geophysical Methods in a Case of Biologically Contaminated Groundwater at Midway, Utah Fish Hatchery," presented at 2001 AEG Annual Meeting, Programs with Abstracts in AEG NEWS, v. 44 n. 4 pg. 67.

2001, Barnhurst, D.O., "Contamination Detection and Monitoring Onsite and Offsite in Burke and Screven Counties, Ga.," in 2001 Research Intern Abstracts Savannah River Site Professional Intern Program.